

Compared with the chart for the preceding month (June), a very marked difference is shown in the position of the southern limit of the ice-region. From July 8th to the close of the month no icebergs had been reported south of the forty-sixth parallel, while in the preceding month they were reported as far south as N. 40° 40', thus showing a difference of more than five degrees of latitude. As regards the eastern limit, it is only about 30' west of that for June.

A comparison with the chart for the corresponding month in 1883 shows that the southern limit in July of that year was about 4° farther south, and the eastern limit about 1° to the eastward of those for the present month.

A comparison with the chart for the same month in 1882 shows the limits of the ice region in that year to have been about 6° to the southward and about the same distance to the eastward of the limits as determined for July, 1884.

The following reports have been received up to August 20th:
July 6th.—Bark "Fluorine" met pack ice in N. 57° 38', W. 45° 21'.

8th.—Capt. G. S. Dale, commanding the s. s. "Brooklyn," reported: "Straits of Belle Isle full of large icebergs; numerous icebergs in the vicinity of Belle Isle. The last berg was seen in N. 52° 41', W. 51° 5'."

9th.—Captain Wilson, of the bark "Fluorine," reported: "working the ship through heavy ice in N. 60° 3', W. 48° 14'."

15.—S. S. "Eider," in N. 47° 6', W. 48° 0', passed an iceberg about eighty-seven feet high; also, in N. 46° 24', W. 50° 2', passed a small berg about five miles to the northward.

18th.—S. S. "State of Nebraska," in N. 47° 25', W. 47° 10', passed two icebergs, one of them being very large.

21st.—S. S. "Edam," in N. 46° 30', W. 46° 45', passed an iceberg.

23d.—Captain Wilson of the bark "Fluorine," reported in N. 60° 42', W. 50° 2' "working out through heavy ice."

24th.—Ship "America," in N. 46° 30', W. 46° 30', passed a small iceberg. Captain Benson, commanding the s. s. "Lake Huron," reported: "Passed numerous large and small icebergs from one hundred and forty miles east of Belle Isle to the eastern entrance to the Straits, then encountered numerous bergs of great magnitude, almost blocking the entrance of the Straits; also passed many icebergs about twenty miles west of Greenland Island."

25th.—Captain W. P. Couch, commanding the s. s. "Ontario," reported: "Many icebergs in the Straits of Belle Isle; saw a large berg in N. 52° 40' W. 52° 25', and many bergs thence to N. 50° 0', W. 59° 30'."

27th.—S. S. "March," in N. 47° 24' W. 46° 35', passed five large icebergs.

28th.—S. S. "Ludgate Hill," in N. 48° 36', W. 46° 28', passed an iceberg.

29th.—S. S. "Ludgate Hill," in N. 47° 14', W. 50° 37', passed an iceberg, also in N. 46° 58', W. 50° 42', passed another, and several between that and Cape Race.

30th.—S. S. "Lord Gough," in N. 48° 3', W. 47° 16', passed two small icebergs.

31st.—S. S. "City of Rome," in N. 47° 50', W. 49° 35', passed an iceberg. Captain Dale, of the s. s. "Brooklyn," reported: "Saw the first ice about four miles east of Belle Isle, one very large berg about two miles east of it. The Straits were full of icebergs and detached pieces."

August 2d.—S. S. "Critic," at New York, reported having passed several icebergs on the coast of Newfoundland.

4th.—S. S. "Celtic," in N. 47° 20', W. 47° 3', passed an iceberg.

8th.—S. S. "Circassia," in N. 47° 10', W. 46° 59', passed a large iceberg.

TEMPERATURE OF THE AIR.

[Expressed in degrees, Fahrenheit.]

The distribution of mean temperature over the United States and Canada for July, 1884, is exhibited on chart ii. by the dotted isothermal lines.

In the following table are shown the normal temperatures for July; the mean temperatures for July, 1884, and the departures from the normal for each of the several geographical districts, as deduced from the records of the Signal Service:

Average temperatures for July, 1884.

Districts.	Average for July, Signal-Service observations.		Comparison of July, 1884, with the average for several years.
	For several years.	For 1884.	
New England.....	69.3	66.3	3.0 below.
Middle Atlantic states.....	75.5	72.9	2.6 below.
South Atlantic states.....	80.6	79.7	0.9 below.
Florida peninsula.....	83.2	83.5	0.3 above.
Eastern Gulf states.....	81.2	80.6	0.6 below.
Western Gulf states.....	82.5	83.7	1.2 above.
Rio Grande valley.....	85.3	85.6	0.3 above.
Tennessee.....	79.3	77.9	1.4 below.
Ohio valley.....	77.5	75.0	2.5 below.
Lower lake region.....	71.0	66.8	4.2 below.
Upper lake region.....	67.7	63.6	4.1 below.
Extreme northwest.....	67.8	63.1	4.7 below.
Upper Mississippi valley.....	75.8	73.0	2.8 below.
Missouri valley.....	74.3	71.8	2.5 below.
Northern slope.....	68.0	65.9	2.1 below.
Middle slope.....	74.7	75.9	1.2 above.
Southern slope.....	80.0	83.7	3.7 above.
Southern plateau.....	81.8	82.8	1.0 above.
Northern plateau.....	70.8	67.4	3.4 below.
North Pacific coast region.....	64.8	62.7	2.1 below.
Middle Pacific coast region.....	71.4	69.9	1.5 below.
South Pacific coast region.....	75.9	76.4	0.5 above.
Mount Washington, N. H.....	47.9	44.6	3.3 below.
Pike's Peak, Colo.....	49.3	39.8	9.5 below.
Salt Lake City, Utah.....	70.3	73.4	2.9 below.

A comparison of the mean temperatures for July, 1884, with the average for the corresponding months, shows the former to have been unusually cool over the greater part of the United States. In southern Florida; along the immediate California coast, south of San Francisco; in southeastern Arizona; and from New Mexico eastward to the lower Mississippi valley, except along the Texas coast from Indianola to the mouth of the Rio Grande river (where there was a slight deficiency), the reports for July, 1884, show that the mean temperature was higher than the average. In the districts above mentioned the departures above the normal were greatest from western Texas to southeastern Arizona, where they were from 4° to 5°. Throughout the northern sections of the country the mean temperatures were everywhere below the average, the departures being most marked from northeastern California to western Montana, and from Dakota eastward to southern New England and the northern portion of the middle Atlantic states, where they ranged from 4° to 6°. Along the immediate coast, from southern New Jersey to Northern Florida, and in Georgia and Alabama, the departures were less than 2°.

The following are some of the highest and lowest monthly mean temperatures reported from the Signal Service stations:

Stations reporting highest.		Stations reporting lowest.	
Fort McDowell, Arizona.....	90.8	Pike's Peak, Colorado.....	39.8
Yuma, Arizona.....	90.6	Mount Washington, New Hampshire.....	44.6
Rio Grande City, Texas.....	88.4	Port Angeles, Washington Territory.....	55.8
Phoenix, Arizona.....	87.7	Eastport, Maine.....	58.6
Shreveport, Louisiana.....	86.2	Fort Canby, Washington Territory.....	58.6
El Paso, Texas.....	85.5	Fort Maginnis, Montana.....	58.6
Fort Concho, Texas.....	85.3	Marquette, Michigan.....	59.9
New Orleans, Louisiana.....	85.3	San Francisco, California.....	60.0
Galveston, Texas.....	85.2	Saint Vincent, Minnesota.....	60.8
Fort Stockton, Texas.....	85.1	Olympia, Washington Territory.....	61.2
Fort Sill, Indian Territory.....	85.1	Mackinaw City, Michigan.....	61.3
Key West, Florida.....	85.0	Fort Shaw, Montana.....	61.6
Indianola, Texas.....	83.5	Deadwood, Dakota.....	62.2

DEVIATIONS FROM MEAN TEMPERATURE.

The departures exhibited by the reports from the regular Signal Service stations are shown in the table of comparative temperatures for July, 1884. Voluntary observers report the following notes in connection with this subject:

Arkansas.—Lead Hill, Boone county: mean temperature, 81° 6, is 4° 2 above the July average of the last two years.

Mount Ida, Montgomery county: mean temperature, 80°.3, is 0°.3 above the July average of the last twelve years.

California.—Princeton, Colusa county: the mean of the maximum temperatures for July, 1884, is 89°.1, or 5°.1 below the average for the last twelve years.

College City, Colusa county: the summer of 1884, up to July 31st, has been the coolest experienced here for more than twenty years, the temperature having reached 100° on only one day.

Dakota.—Webster, Day county: mean temperature, 73°.1, is 1°.5 below the July average of the two preceding years.

Illinois.—Anna, Union county: mean temperature, 77°.7, is 1°.2 below the July average of the last nine years.

Riley, McHenry county: mean temperature, 67°.4, is 3°.2 below the July average of the last twenty-three years; in only two years of the above period has the month of July been colder, viz: in 1865 and 1882; and in only two years have the maximum temperatures been lower, viz: in 1869 and 1882.

Swanwick, Perry county: mean temperature, 75°.5, is 1°.1 below the July average of the last three years.

Mattoon, Coles county: mean temperature, 74°.4, is 4°.1 below the July average of the four preceding years.

Indiana.—Vevay, Switzerland county: mean temperature, 74°.8, is 4° below the July average of the last twenty years; the maximum temperature, 90°, is 5°.7 below the average, and the minimum, 54°, is 5°.9 below.

Wabash, Wabash county: mean temperature, 73°.2, is 1° below the July average of the last eight years.

Logansport, Cass county: mean temperature, 72°.5, is 5°.1 below the July average of the last twenty-five years. The extremes for July, 1884, are: maximum, 89°; minimum, 52°; the July extremes for twenty-five years are: maximum, 106° in 1874; minimum, 46° in 1863.

Iowa.—Iowa City, Johnson county: mean temperature for July, 1884, is 2° below the normal.

Kansas.—Independence, Montgomery county: mean temperature, 78°.3, is 1°.1 below the July average of the last thirteen years.

Yates Center, Woodson county: mean temperature, 78°.7, is 2°.1 above the average of the last four years.

Wellington, Sumner county: mean temperature, 78°.4, is 1°.1 above the July average of the last six years.

Maine.—Gardiner, Kennebec county: mean temperature, 65°.0, is 3°.7 below the July average of the last forty-eight years, and is the lowest July mean recorded during the above period.

Maryland.—Fallston, Harford county: mean temperature, 71°.0, is 4°.3 below the July average of the last ten years, and is the lowest July mean of that period, the next lowest being 73°.6 for July, 1882.

Massachusetts.—Worcester, Worcester county: mean temperature, 64°.5, is 8°.1 below the July average of the last forty-five years, and is the lowest July mean for that period, the next lowest being 66°.3 for 1860, and the highest, 78°.1 for 1850. The extremes for July, 1884, are: maximum, 82°; minimum, 51°; the extremes for July of the last forty-five years being 95° (maximum) in 1849; and 48° (minimum) in 1845, 1849, and 1851.

Missouri.—Saint Louis: mean temperature, 77°.6, is 1°.6 below the normal.

New Hampshire.—Contoocook, Merrimack county: mean temperature, 69°.4, is about 1° below the normal for July.

New Jersey.—Paterson, Passaic county: mean temperature, 70°, is the lowest July mean of the last ten years.

South Orange, Essex county: mean temperature, 69°.3, is 4°.1 below the July average of the last fourteen years.

New York.—Palermo, Oswego county: mean temperature, 62°.9, is 6°.6 below the July average for the last thirty-one years.

North Volney, Oswego county: mean temperature, 64°.9, is 4°.7 below the average for July of the last seventeen years, and is the lowest July mean for that period, the highest being 76°.2 for 1868.

Ohio.—Wauseon, Fulton county: mean temperature, 70°.1, is 2°.5 below the July average of the last fourteen years.

Table of maximum and minimum temperatures for July, 1884.

State or Territory.	Signal Service.			U. S. Army Post Surgeons, or Voluntary Observers.		
	Station.	Max.	Min.	Station.	Max.	Min.
Alabama.....	Mobile.....	95	70	Troy.....	104	69
Do.....	Montgomery.....	95	66	Selma.....	94	54
Arizona.....	Fort McDowell.....	116	62	Texas Hill.....	118	70
Do.....	Fort Apache.....	102	47	Benson.....	108	79
Arkansas.....	Fort Smith.....	104	65	Lend Hill.....	105	62
Do.....	Little Rock.....	101	68	Monticello.....	100	50
California.....	Low Angeles.....	99	52	Mammoth Tank.....	126	78
Do.....	Fort Bidwell.....	97	36	Summit.....	72	38
Colorado.....	West Las Animas.....	104	52	Fort Lyon.....	104	52
Do.....	Pike's Peak.....	54	28	Fort Collins.....	102	51
Connecticut.....	New Haven.....	87	54	Hartford.....	95	54
Do.....	New London.....	83	55	Sonthington.....	94	54
Dakota.....	Fort Bennett.....	97	50	Morrison.....	98	50
Do.....	Bismarck.....	89	32	Fort Buford.....	95	38
Delaware.....	Del. Breakwater.....	86	60			
District of Columbia.....	Washington City.....	96	56	Rock Creek Bridge.....	99	64
Florida.....	Pensacola.....	97	59	Live Oak.....	99	63
Do.....	Jacksonville.....	96	60	Saint Augustine.....	93	63
Georgia.....	Savannah.....	96	68	Athens.....	100	64
Do.....	Atlanta.....	96	65	Gainesville.....	92	47
Idaho.....	Lewiston.....	84	49			
Do.....	Acad. Alene.....	83	39			
Illinois.....	Chicago.....	89	54	McLeansborough.....	98	57
Do.....	Indianapolis.....	90	55	Aurora.....	94	50
Indiana.....				Sumner.....	98	54
Do.....				Spice Land.....	93	47
Indian Territory.....	Fort Sill.....	107	65			
Do.....	Fort Reno.....	105	58			
Iowa.....	Des Moines.....	95	55	Logan & Manchester.....	96	54
Do.....	Davenport.....	88	56	Monticello.....	92	50
Kansas.....	Leavenworth.....	101	58	Wellington.....	105	57
Do.....	Dodge City.....	98	58	Westmoreland.....	98	51
Kentucky.....	Louisville.....	94	62	Bowling Green.....	91	55
Do.....				Richmond.....	93	62
Louisiana.....	Shreveport.....	104	72	Minlen.....	100	65
Do.....	New Orleans.....	95	71	Opelousas.....	104	62
Maine.....	Portland.....	87	55	Corish.....	92	55
Do.....	Eastport.....	81	45	Gardiner.....	83	48
Maryland.....	Baltimore.....	95	60	Great Falls.....	94	50
Do.....	Ocean City.....	88	54	Weststock.....	93	49
Massachusetts.....	Boston.....	90	54	Westborough.....	95	55
Do.....	Thatcher's Island.....	82	53	Sumner.....	94	40
Michigan.....	Detroit.....	89	51	Mendon.....	97	45
Do.....	Marquette.....	86	43	Fort Brady.....	83	37
Minnesota.....	Saint Paul.....	88	52	Hastings.....	98	40
Do.....	Saint Vincent.....	83	41	Northfield.....	88	44
Mississippi.....	Vicksburg.....	99	70	Okola.....	104	64
Do.....				Monroe.....	99	63
Missouri.....	Saint Louis.....	94	65	Harrisonville.....	103	66
Do.....				Conception.....	93	55
Montana.....	Poplar River.....	93	40			
Do.....	Fort Shaw.....	85	38	Red Willow.....	100	50
Nebraska.....	Omaha.....	97	58	Fremont.....	98	50
Do.....	North Platte.....	97	54	Winnemucca.....	105	70
Nevada.....				Hot Springs.....	95	32
New Hampshire.....	Mount Washington.....	67	30	Contoocook.....	93	44
New Jersey.....	Little Egg Harbor.....	90	55	Salem City.....	97	65
Do.....	Atlantic City.....	90	57	South Orange.....	90	58
New Mexico.....	Fort Craig.....	107	70	Puerto de Luna.....	108	72
Do.....				Fort Union.....	95	47
New York.....	New York City.....	90	57	Ardonia.....	95	40
Do.....	Rochester.....	89	48	Madison Barracks.....	90	44
North Carolina.....	Kitty Hawk.....	97	62	Lumberton.....	100	59
Do.....	Scott's Hill.....	93	60	Salisbury.....	100	51
Ohio.....	Sundusky.....	91	57	Jacksonborough.....	100	54
Do.....	Cleveland.....	86	54	Lebanon.....	94	41
Oregon.....	Roseburg.....	86	43	East Portland.....	86	52
Do.....	Asland.....	100	42	Bandon.....	60	46
Pennsylvania.....	Pittsburg.....	97	52	Easton.....	96	61
Do.....	Philadelphia.....	92	59	Wellsborough.....	92	42
Rhode Island.....	Narragansett Pier.....	85	42			
Do.....	Point Judith.....	81	54			
South Carolina.....	Charleston.....	95	69	Anderson.....	104	61
Do.....				Cheraw.....	101	59
Tennessee.....	Chattanooga.....	92	61	Hohenwald.....	99	50
Do.....	Nashville.....	94	64	Andersonville.....	94	46
Texas.....	El Paso.....	111	60	Corsicana.....	105	57
Do.....	Fort Elliott.....	99	62	Dallas.....	105	68
Utah.....	Salt Lake City.....	93	54	Promontory.....	105	60
Do.....	Fort Thornburg.....	104	45	Blue Creek.....	98	39
Vermont.....				Charlotte.....	93	53
Do.....				Dorset.....	86	39
Virginia.....	Lynchburg.....	96	57	Accotink.....	100	64
Do.....	Cape Henry.....	96	62	Wytheville.....	97	45
Washington Territory.....	Dayton.....	96	44	Pleasant Grove.....	91	43
Do.....	Port Angeles.....	73	41	Bainbridge Island.....	80	50
West Virginia.....				Helvetia.....	92	42
Wisconsin.....	La Crosse.....	91	55	Beloit.....	96	49
Do.....	Milwaukee.....	90	54	Neillsville.....	82	39
Wyoming.....	Cheyenne.....	90	44	Fort Bridger.....	86	30
Do.....	Fort Bridger.....	89	30	Fort Fred Steele.....	93	32

Pennsylvania.—Wellsborough, Tioga county: month remarkable for its low mean temperature, which is 66°.7, or 4°.2 below the July average of the last twenty years.

Dyberry, Wayne county: mean temperature, 65°.2, is 3° below the July average of the last seventeen years.

Texas.—New Ulm, Austin county: mean temperature, 84°.2, is 1°.5 above the July average of the last thirteen years.

Vermont.—Woodstock, Windsor county: mean temperature, 66°.0, is 2°.0 below the average of the last seventeen years. The extreme monthly means for that period are: highest, 71°.3, for 1878; lowest, 64°.3, for 1869.

Virginia.—Wytheville, Wythe county: mean temperature, 69°.9, is 2°.3 below the July normal for a period of twenty years.

Variety Mills, Nelson county: mean temperature, 72°.7, is 3°. below the July average of the last seven years.

West Virginia.—Helvetia, Randolph county: mean temperature, 66°.6, is 3°.6 below the July average for the last eight years.

MONTHLY RANGES OF TEMPERATURE.

The monthly ranges of temperature were greatest in the Rocky mountain districts and in the extreme northwest; they were least along the Pacific, Atlantic, and Gulf coasts, and in the central and lower Mississippi valleys; they varied in

Table of comparative maximum temperatures for the month of July.

State or Territory.	Maximum for July, 1884, Signal Service.		Maximum since Signal-Service stations were opened—3 to 13 years.			Highest from any other source.			
	Station.	Temperature.	Station.	Temperature.	Year.	Place.	Temperature.	Year.	Length of record.
Alabama	Montgomery	95	Montgomery	107	1881	Mount Vernon Arsenal	100	1881	33
Do	Mobile	95	Mobile	101	1881	Mobile	98	1873	34
Arizona	Yuma	112	Yuma	118	1878	Fort Mojave	118	1879, 1873	22
Do	Fort McDowell	116	Stanwix	116	1877	Camp Grant	116	1871	14
Arkansas	Little Rock	101	Little Rock	100	1879, 1881	Washington (near)	103	1890	28
Do	Fort Smith	104	Fort Smith	100	1882, 1883	Fort Smith	105	1860	21
California	Red Bluff	99	Red Bluff	110	1879	Fort Yuma	119	1877	32
Do	Los Angeles	99	Visalia	107	1879	Fort Miller	118	1871	13
Colorado	Denver	96	Denver	102	1874	Fort Lyon	108	1879, 78	23
Do	Pike's Peak	54	Pike's Peak	64	1879	Fort Garland	97	1871	21
Connecticut	New Haven	87	New Haven	95	1876	New Haven	101	1871	88
Do	New London	83	New London	93	1876, 1878	Columbia	100	1866	10
Dakota	Fort Bennett	97	Fort Sully	109	1877	Fort Sully	114	1871	17
Do	Fort Buford	93	Fort Buford	104	1881	Fort Randall	107	1871	14
Delaware	Delaware Breakwater	80	Delaware Breakwater	91	1880	Fort Delaware	101	1865	45
District of Columbia	Washington City	96	Washington City	102	1879	Washington City	103	1838	49
Florida	Jacksonville	96	Jacksonville	104	1879	Fort King	103	1871	10
Do	Key West	94	Key West	97	1880	Fort Barrancas	100	1860	52
Georgia	Augusta	94	Augusta	105	1878	Forsyth	106	1881	7
Do	Savannah	95	Savannah	105	1879	McPherson Barracks	107	1878	7
Idaho	Boise City	92	Boise City	106	1877	Fort Boise	113	1871	15
Do	Lewiston	91	Fort Lapwai	104	1881	Fort Lapwai	110	1871	10
Illinois	Chicago	92	Chicago	99	1874, 1881	Chicago	106	1868	39
Do	Springfield	92	Springfield	102	1879	Springfield	103	1868	5
Indiana	Indianapolis	90	Indianapolis	101	1881	Wabash	104	1876	15
Do	Fort Reno	105	Fort Gibson	109	1879	Spiceland	100	1854, 1881	15
Do	Fort Sill	107	Fort Sill	106	1881	Fort Sill	100	1871	10
Iowa	Dubuque	92	Dubuque	101	1874	Fort Arbuckle	109	1856	20
Do	Keokuk	93	Keokuk	100	1874	Fort Madison	105	1870	20
Kansas	Dodge City	97	Dodge City	108	1876	Brookside	105	1868	5
Do	Leavenworth	97	Leavenworth	104	1874	Fort Larned	115	1871	15
Kentucky	Louisville	94	Louisville	102	1874	Fort Riley	111	1860	20
Louisiana	Shreveport	104	Shreveport	107	1875	Newport Barracks	98	1877, 1878	29
Do	New Orleans	95	New Orleans	96	1877	Baton Rouge	102	1877, 1878	57
Maine	Portland	87	Portland	97	1876	New Orleans	100	1840, 1841	51
Do	Eastport	81	Eastport	97	1876	Brunswick	102	1868	53
Maryland	Baltimore	95	Baltimore	98	1880	Fort Preble	101	1881	60
Do	Ocean City	88	Baltimore	99	76, 79, 80	Fort Washington	102	1871	46
Massachusetts	Boston	90	Boston	101	1880	Fort McHenry	102	1879	51
Do	Thatcher's Island	82	Springfield	94	1876, 1879	Westborough	103	1870	7
Michigan	Detroit	89	Detroit	100	1878	Fort Warren	100	1872	19
Do	Marquette	86	Marquette	100	1878	Marquette	103	1862	9
Minnesota	Saint Paul	88	Saint Paul	100	1878	Mourne	103	1866	11
Do	Moorhead	83	Breckenridge	97	1878	Fort Ripley	103	1871	16
Mississippi	Vicksburg	99	Vicksburg	100	1878, 1881	Fort Snelling	103	1868	62
Do	Saint Louis	94	Starkville	91	1882	Brookhaven	102	1880	7
Missouri	Fort Keogh	93	Springfield	98	1882	Meridian	104	1882	1
Do	Fort Benton	93	Saint Louis	98	1881	Allenton	109	1868	4
Montana	Fort Benton	93	Fort Keogh	104	1881	Saint Louis	103	1872	38
Do	North Platte	97	Fort Benton	107	1881	Fort Shaw	112	1872	13
Nebraska	Omaha	97	North Platte	107	1877	Fort Benton	105	1870	4
Do	Omaha	97	Omaha	105	1874	Fort McPherson	115	1870	15
Nevada	Mount Washington	97	Winnemucca	104	1877	Fort Calhoun	108	1874	5
New Hampshire	Sandy Hook	99	Mount Washington	72	1881	Camp Halleck	110	1876	11
Do	Atlantic City	90	Sandy Hook	100	1876	Stratford	100	1868	11
New Jersey	Fort Craig	107	Atlantic City	99	1880	Haddonfield	102	1866	7
Do	Fort Craig	107	La Mesilla	107	1880	Paterson	99	1866	6
New Mexico	Oswego	88	Fort Bayard	107	1880, 1882	Fort McKee	110	1873	10
Do	New York City	90	Oswego	115	1882	Fort Craig	112	1867	29
New York	Wilmington	94	New York City	100	1878	Newburg	105	1849	40
North Carolina	Charlotte	93	Wilmington	99	1876	Fort Columbus	104	1821	61
Do	Cincinnati	91	Charlotte	103	1879	Weldon	107	1879	9
Ohio	Columbus	89	Cincinnati	101	1879	Fort Johnson	104	1831	57
Do	Portland	84	Columbus	103	1874, 1881	Jacksonburg	104	1881	8
Oregon	Roseburg	86	Umatilla	107	1880	Marietta	102	1869	54
Do	Pittsburg	97	Roseburg	97	1880	Fort Dalles	105	1853	15
Pennsylvania	Philadelphia	92	Pittsburg	103	1880	Fort Hoskins	101	1868	35
Do	Narragansett Pier	85	Philadelphia	100	1876	Carlisle Barracks	105	1868	35
Rhode Island	Charleston	95	Newport	92	1878	Mount Joy	103	1868	10
South Carolina	Charleston	95	Charleston	104	1879	Fort Adams	102	1867	41
Tennessee	Nashville	94	Charleston	101	1879	Charleston	101	1752	105
Do	El Paso	111	Nashville	101	74, 79, 81	Castalian Springs	103	1875	3
Texas	Rio Grande City	110	Eagle Pass	112	1881	Glenwood Cottage	99	1860	11
Do	Salt Lake City	93	Laredo	110	1879	Fort Mason	114	1860	9
Utah	Fort Thornburg	104	Salt Lake City	98	1877	Camp Stockton	111	1860	15
Vermont	Burlington	96	Burlington	96	1878	Camp Douglas	103	1877	20
Do	Norfolk	96	Norfolk	102, 5	1876	Mount Carmel	112	1877	3
Virginia	Lynchburg	96	Lynchburg	102	1881	Randolph	102	1868	5
Washington Territory	Spokane Falls	91	Albion	105	1882	Dover Mines (near)	104	1879	3
Do	Dayton	96	Dayton	102	1880	Fortress Monroe	101	1851	57
West Virginia	Morgantown	97	Morgantown	101	1874	Fort Walla Walla	107	1859, 1860	13
Wisconsin	La Crosse	91	La Crosse	101	1874	Cape Disappointment	104	1865	9
Do	Milwaukee	90	Milwaukee	95	1874, 1878	Flemington	98	1881	1
Do	Cheyenne	90	Cheyenne	100	1881	Embarras	104	1866	14
Wyoming	Cheyenne	90	Cheyenne	100	1881	Fort Winnebago	104	1838	15
						Fort Laramie	107	1876	27

extremes from 18° at Key West, Florida, and 19° at Fort Macon, North Carolina, and Galveston, Texas, to 59° at Cœur d'Alene, Idaho, Fort Thornburg, Utah, and Phoenix, Arizona, and to 60° at Fort Bidwell, California, and Wickenburg, Arizona.

The following stations report monthly ranges of 50° or more: Fort Custer and Poplar River, Montana, and San Carlos, Arizona, 50°; Fort Thomas, Arizona, and Fort Benton, Montana, 51°; Dayton, Washington Territory, and West Las Animas, Colorado, 52°; Fort McDowell, Arizona, 54°; Willcox, and Forts Apache, and Verde, Arizona, 55°; Bismarck, Dakota, 57°; Fort Buford, Dakota, and Fort Bridger, Wyoming, 58°; Cœur d'Alene, Idaho, Fort Thornburg, Utah, and Phoenix, Arizona, 59°; Fort Bidwell, California, and Wickenburg, Arizona, 60°.

Monthly ranges of 27° and less occurred at the following stations: Key West, Florida, 18°; Fort Macon, North Carolina, and Galveston, Texas, 19°; Brownsville, Texas, and Cedar Keys, Florida, 21°; Fort Canby, Washington Territory, Indianola, Texas, and Hatteras, North Carolina, 22°; Fort Smith, Arkansas, and New Orleans, Louisiana, 23°; Block Island, Rhode Island, 24°; Atlanta, Georgia, and Cairo, Illinois, 25°; Pike's Peak, Colorado, Charleston, South Carolina, and Mobile, Alabama, 26°; Cape May, New Jersey, Jacksonville, Florida, Point Judith, Rhode Island, and Wilmington, North Carolina, 27°.

GREATEST DAILY RANGES OF TEMPERATURE.

The greatest daily ranges of temperature varied in the several districts as follows:

New England.—From 16° at Block Island, Rhode Island, on the 3d and 16th, to 29° at Eastport, Maine, on the 3d.

Middle Atlantic states.—From 19° at Delaware Breakwater, Delaware, on the 22d, to 30° at Washington City, District of Columbia, on the same date.

South Atlantic states.—From 15° at Fort Macon and Hatteras, North Carolina, on the 7th and 10th, respectively, to 25° at Kitty Hawk, North Carolina, on the 25th.

Florida peninsula.—From 15° at Key West on the 26th, to 19° at Cedar Keys on the 6th.

East Gulf states.—From 19° at New Orleans, Louisiana, on the 26th, to 26° at Vicksburg, Mississippi, on the 12th.

West Gulf states.—From 15° at Galveston, Texas, on the 10th to 35° at Fort Smith, Arkansas, on the 11th.

Rio Grande valley.—From 21° at Brownsville, Texas, on the 21st, to 34° at Rio Grande City, Texas, on the same date.

Tennessee.—From 24° at Nashville, on the 22d, to 27° at Knoxville, on the same date.

Ohio valley.—From 23° at Cincinnati, Ohio, on the 22d, to 37° at Pittsburg, Pennsylvania, on the same date.

Lower lake region.—From 24° at Rochester, New York, Erie, Pennsylvania, Toledo, Ohio, and Oswego, New York, on the 1st, 11th, 22d, and 30th, respectively, to 37° at Sandusky, Ohio, on the 22d.

Upper lake region.—From 19° at Grand Haven, Michigan, on the 18th, to 29° at Escanaba, Michigan, on the 20th.

Extreme northwest.—From 31° at Moorhead and Saint Vincent, Minnesota, on the 9th and 19th, respectively, to 40° at Fort Buford, Dakota, on the 9th.

Upper Mississippi valley.—From 22° at Cairo, Illinois, and Saint Louis, Missouri, on the 5th and 12th, respectively, to 30° at Dubuque, Iowa, on the 10th.

Missouri valley.—From 29° at Omaha, Nebraska, and Yaukon, Dakota, on the 10th and 21st, respectively, to 38° at Fort Bennett, Dakota, on the 25th.

Northern slope.—From 30° at Deadwood, Dakota, on the 9th, to 47° at Forts Benton and Shaw, Montana, on the 5th.

Middle slope.—From 21° on the summit of Pike's Peak, Colorado, on the 26th, and 22° at Dodge City, Kansas, on the 6th, to 46° at West Las Animas, Colorado, on the 4th.

Southern slope.—From 37° at Fort Sill, Indian Territory, and Fort Concho, Texas, on the 11th, to 38° at Fort Stockton, Texas, on the 30th.

Southern plateau.—From 27° at Fort Grant, Arizona, on the 4th, to 49° at Fort Apache, Arizona, on the 26th.

Middle plateau.—32° at Salt Lake City, Utah on the 5th.

Northern plateau.—From 33° at Boise City, Idaho, on the 27th, to 40° at Dayton, Washington Territory, on the 25th.

North Pacific coast region.—From 18° at Fort Canby, Washington Territory, on the 26th, to 35° at Roseburg, Oregon, and Olympia, Washington Territory, on the 8th and 13th, respectively.

Middle Pacific coast region.—From 24° at San Francisco, California, on the 10th, to 38° at Red Bluff, California, on the 31st.

South Pacific coast region.—From 21° at San Diego, California, on the 10th, to 42° at Los Angeles, California, on the 1st.

FROSTS.

Frosts occurred during July, as follows:

California.—Blue Lake, 7th.

Colorado.—On the summit of Pike's Peak, 20th, 25th, 26th.

Dakota.—Fort Totten, 1st, 12th.

Montana.—Fort Maginnis: reports from Maidenville state that ice formed to a thickness of one-eighth inch, and that a killing frost occurred at that place on the 5th. Maidenville is five miles distant from, and its altitude about eight hundred feet above Fort Maginnis.

Nevada.—Carson City, 4th, 16th, 18th, 19th, 20th.

New Hampshire.—Dover: a heavy frost occurred in Latham during the night of the 25–26th, which seriously injured the crops.

Petersborough: there was considerable frost in the low lands on the morning of the 26th, which caused injury to beans and other vegetables.

Frosts occurred on the summit of Mount Washington on the 25th, 26th, and 29th.

Pennsylvania.—Troy, 8th, 17th; Wellsborough, 15th.

Vermont.—Woodstock, 26th.

The following extract is from the "Canadian Weather Review" for July, 1884:

Sharp frosts are reported from the eastern part of Ontario, at Ennismore, on the 21st; at L'Amable and Denbigh on the 25th; and at Shoal Lake, Manitoba, potatoes are reported to have been cut down by frost on the 1st.

PRECIPITATION.

[Expressed in inches and hundredths.]

The distribution of rainfall over the United States and Canada, as determined by the reports from nearly eight hundred stations, is exhibited on chart iii.

A comparison of the precipitation for July 1884, with the average for the corresponding month for a series of years shows deficiencies in the following districts: upper lake region, Ohio valley, western Tennessee, and, with the exception of a few localities, in all of the southern districts. From Arizona eastward to the Mississippi river the deficiencies at numerous stations exceeded three inches, and owing to the unusually small precipitation in those districts, severe drought prevailed. While the average precipitation for the east Gulf states, as shown in the table, is about normal, it was unevenly distributed, being deficient over Alabama and Georgia and excessive in the vicinities of Pensacola, Florida; Vicksburg, Mississippi; and Chattanooga, Tennessee. The precipitation for July, 1884, exceeded the average in the following districts: eastern Tennessee; in the Atlantic coast states north of South Carolina; in the Arkansas and Missouri valleys; central and western Montana; central and southern Illinois; central Indiana; northeastern Ohio; and in western New York. The excess was greatest in the lower Missouri valley; New England; the middle Atlantic states; and in western Montana. On the summit of Mount Washington, New Hampshire, the precipitation for the month was 23.90, which is an excess of 14.08 over the average for July, and is the largest amount recorded in any month since observations were begun in September, 1871; the next largest being 23.41 for April, 1878.

The first column of the following table shows the average precipitation for the month of July in each of the various districts, as determined from Signal Service observations for a